

Patent Claims

1. Method for encoding a digital message upon employment of an encoding format of a network protocol,
- whereby the message is encoded to form an encoded message upon employment of the encoding format of the network protocol;
5 - whereby the encoded message is subjected to at least one cryptographic process; and
- whereby the cryptographically processed message is encoded upon employment of the encoding format of the network protocol.

10 2. Method for decoding a digital message that is present in an encoding format of a network protocol,
- whereby the message is decoded according to the encoding format of the network protocol;
- whereby the decoded, cryptographically processed message is subjected to a cryptographic process inverse relative to the at least one cryptographic process; and
15 - whereby the inversely cryptographically processed message is decoded according to the encoding format of the network protocol.

20 3. Method for encoding a digital message, for transmission of the message from a first computer unit to a second computer unit and for decoding the message,
- whereby the following steps are implemented in the first computer unit:
-- the message is encoded into an encoded message upon employment of an encoding format of a network protocol;
-- the encoded message is [...] to at least one cryptographic process;
-- the cryptographically processed message is encoded upon employment of
25 the encoding format of the network protocol,
- whereby the encoded, cryptographically processed message is transmitted from the first computer unit to the second computer unit,
- whereby the following steps are implemented in the second computer unit:

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the received message is decoded according to the encoding format of the network protocol;

- the decoded, cryptographically processed message is subjected to a cryptographic process inverse relative to at least one cryptographic process; and

5 - the inversely cryptographically processed message is decoded into the digital message according to the encoding format of the network protocol.

4. Method according to claim 3,

- whereby the digital message contains a request for implementation of a prescribable action;

10 - whereby the requested action is implemented in the second computer unit; and

- whereby the result of the action in the second computer unit is sent to the first computer unit in a reply message.

5. Method according to claim 3

15 - whereby the digital message contains a request for implementation of a prescribable action;

- whereby the requested action is implemented in the second computer unit;

- whereby a reply message that contains a result of the action is formed in the second computer unit;

20 - whereby the reply message is encoded in the second computer unit according to the encoding format of the network protocol;

- whereby the reply message is subjected to at least one cryptographic process in the second computer unit;

- whereby the cryptographically processed reply message is stored in the second computer unit;

25 - whereby a fetch message is encoded in the first computer unit according to the encoding format of the network protocol, the cryptographically processed reply message being requested from the second computer unit therewith;

whereby the fetch message is transmitted from the first computer unit to the second computer unit;

- whereby the fetch message is received by the second computer unit;
- whereby the cryptographically processed reply message is encoded according to the encoding format of the network protocol; and
- whereby the encoded, cryptographically processed reply message is transmitted from the second computer unit to the first computer.

6. Method according to claim 3,

- whereby the digital message contains a request for implementation of a prescribable action;
- whereby the requested action is implemented in the second computer unit;
- whereby a reply message that contains a result of the action is formed in the second computer unit;
- whereby the reply message is encoded in the second computer unit according to the encoding format of the network protocol;
- whereby the reply message is subjected to at least one cryptographic process in the second computer unit;
- whereby the cryptographically processed reply message is encoded according to the encoding format of the network protocol; and
- whereby the encoded, cryptographically processed reply message is transmitted from the second computer unit to the first computer unit.

7. Method according to one of the claims 2 through 6, whereby the cryptographically processed reply message is stored in a management information base (MIB) in the second computer unit.

8. Method according to one of the claims 1 through 4, whereby the simple network management protocol version 1 (SNMPv1) is employed as network protocol.

9. Method according to claim 8,

- whereby a set request is formed in the first computer unit in the encoding of the cryptographically processed message; and

whereby the set request is transmitted from the first computer unit to the second computer unit.

10. Method according to claim 8 or 9,
whereby a get request is employed as fetch message;
5 whereby a get response is formed in the encoding of the requested, cryptographically processed reply message.

11. Method according to one of the claims 4 through 10, whereby an information query and/or an information indication of the second computer unit is transmitted as action.

10 12. Apparatus comprising at least one computer unit that is configured such that the method according to one of the claims 1 through 11 can be implemented.

13. Apparatus for encoding a digital message upon employment of an encoding format of a network protocol, comprising at least the following components:
- a first means for encoding the digital message upon employment of the encoding format of the network protocol to form an encoded message;
15 a second means for the cryptographic processing of the encoded message;
- a third means for encoding the cryptographically processed message upon employment of the encoding format of the network protocol.

14. Apparatus for decoding a digital message that is present in an encoding format of a network protocol, comprising at least the following components:
20 -- a fifth means for receiving the encoded, cryptographically processed message from the first computer unit;
- a sixth means for decoding the received message according to the encoding format of the network protocol;

25 -- a seventh means for the inverse cryptographic processing of the decoded, cryptographically processed message; and
- -- an eighth means for the decoding of the inversely cryptographically processed message according to the encoding format of the network protocol.

15. Apparatus for encoding a digital message, for transmission of the message from a first computer unit to a second computer unit and for decoding the message, - whereby a first computer unit is provided that comprises at least the following components:

5 -- a first means for encoding the digital message upon employment of an encoding format of a network protocol to form an encoded message,

-- a second means for the cryptographic processing of the encoded message,

-- a third means for encoding the cryptographically processed message upon employment of the encoding format of the network protocol,

10 -- a fourth means for sending the encoded cryptographically processed message from the first computer unit to the second computer unit;

- whereby a second computer unit is provided that comprises at least the following components:

-- a fifth means for receiving the encoded, cryptographically processed message from the first computer unit,

-- a sixth means for decoding the received message according to the encoding format of the network protocol,

-- a seventh means for the inverse cryptographic processing of the decoded, cryptographically processed message, and

20 -- an eighth means for decoding the inversely cryptographically processed message according to the encoding format of the network protocol.

16. Apparatus according to claim 13 or 15, whereby the first means is provided as third means.

17. Apparatus according to claim 14 or 15, whereby the sixth means is
25 provided as eighth means.

18 Apparatus according to one of the claims 15 through 17

- whereby the digital message contains a request for implementation of a prescribable action;

whereby a ninth means for the implementation of the requested action is provided in the second computer unit; and

whereby a tenth means is provided in the second computer unit for sending the result of the action to the first computer unit.

5 19. Apparatus according to one of the claims 15 through 18

whereby the digital message contains a request for implementation of a prescribable action;

whereby a ninth means is provided in the second computer unit for the implementation of the requested action;

10 whereby an eleventh means is provided in the second computer unit for forming a reply message that contains a result of the action;

whereby a twelfth means is provided in the second computer unit for encoding the reply message according to the encoding format of the network protocol;

whereby a thirteenth means is provided in the second computer unit for processing the reply message with at least one cryptographic process;

15 whereby a fourteenth means is provided in the second computer unit for storing the cryptographically processed reply message;

whereby a fifteenth means is provided in the first computer unit for forming and encoding a fetch message according to the encoding format of the network protocol, with which the cryptographically processed reply message is requested from the second computer unit;

20 whereby a sixteenth means is provided in the first computer unit for sending the fetch message from the first computer unit to the second computer unit;

whereby a seventeenth means is provided in the second computer unit for receiving the fetch message;

25 whereby an eighteenth means is provided in the second computer unit for encoding the cryptographically processed reply message requested in the fetch message according to the encoding format of the network protocol, and

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whereby a nineteenth means is provided in the second computer unit for sending the encoded, cryptographically processed reply message from the second computer unit to the first computer unit.

20. Apparatus according to one of the claims 15 through 18
5 - whereby the digital message contains a request for implementation of a prescribable action;
- whereby a ninth means is provided in the second computer unit for the implementation of the requested action;
- whereby an eleventh means is provided in the second compute unit for formation of a reply message that contains a result of the action;
10 - whereby a twleventh means is provided in the second computer unit for encoding the reply message according to the encoding format of the network protocol;
- whereby a thirteenth means is provided in the second computer unit for processing the reply message with at least one cryptographic process;
15 - whereby an eighteenth means is provided in the computer unit for encoding the cryptographically processed reply message according to the encoding format of the network protocol; and
- whereby a nineteenth means is provided in the second computer unit for sending the encoded, cryptographically processed reply message from the second computer unit to the first compute unit.

20. 21. Apparatus according to claim 19 or 20, whereby the fourteenth means is fashioned such that the cryptographically processed reply message is stored in a management information base (MIB).

22. 23. Apparatus according to one of the claims 13 through 21 that is fashioned such that the simple network management protocol version 1 (SNMPv1) is employed as network protocol.

25. Apparatus according to claim 13 or 15,
- that is fashioned such that the simple network management protocol version 1 (SNMPv1) is employed as network protocol; and

whereby the third means for encoding the cryptographically processed message is fashioned such that a set request is formed in the encoding of the cryptographically processed message.

24. Apparatus according to claim 22

5 - whereby the fifteenth means for forming and encoding the fetch message is fashioned such that a get request is formed;

- whereby the eighteenth means for encoding the cryptographically processed reply message requested in the fetch message is fashioned such that a get response is formed.

10 25. Apparatus according to one of the claims 15 through 24, whereby an information query and/or an information particular of the second computer unit is provided as action.

26. Apparatus according one of the claims 12 through 25, whereby the second means, a third means and the fourth means are fashioned together as a first proxy agent; and/or

15 whereby the fifth means, the sixth means and the seventh means are fashioned together as a second proxy agent.

27. Communication system having a manager of a communication network and an intermediate manager of a communication network that employs the communication network and offers further services that proceed beyond the services offered by the communication network to customers, comprising a computer system according to one of the claims 13 through 26.

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